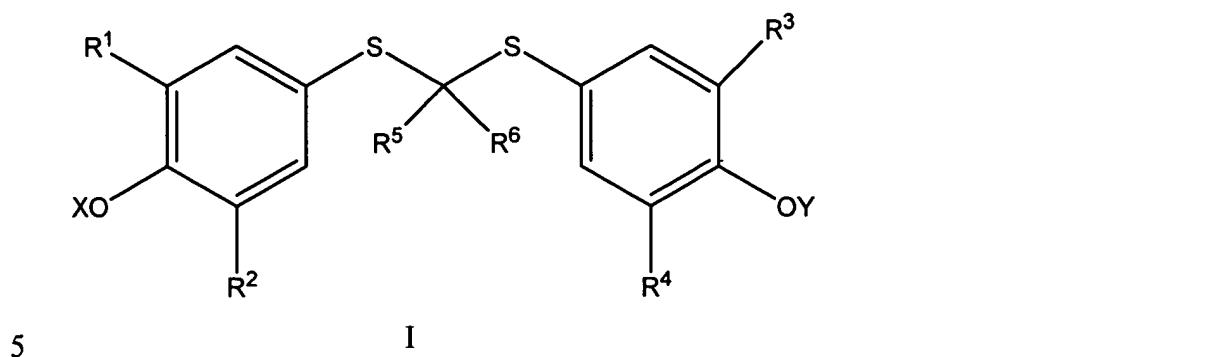


We Claim:

1. A process of manufacturing a compound of Formula I or salts thereof



5

wherein R¹, R², R³, and R⁴ are independently selected from the group consisting of hydrogen and alkyl, said alkyl optionally substituted by hydroxy, alkyl, alkenyl, acyl, nitro, amino, halo, carboxy and cyano;

10 R⁵ and R⁶ are the same or different and independently selected from the group consisting of alkyl, alkenyl, and aryl all of which can be optionally substituted by hydroxy, alkyl, alkenyl, acyl, nitro, amino, halo, carboxy and cyano;

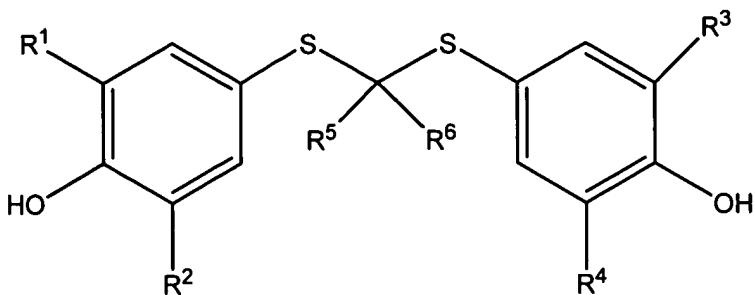
R⁵ and R⁶ can come together to form a carbocyclic ring;

X is selected from the group consisting of hydrogen, an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms, and an optionally substituted saturated acyl having from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality;

15 Y is selected from the group consisting of an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality;

20 comprising:

25 reacting a compound of Formula II



II

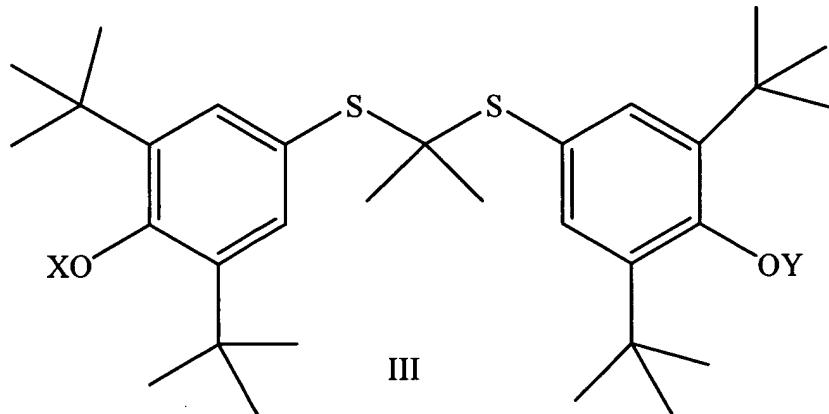
wherein R¹, R², R³, R⁴, R⁵ and R⁶ are as previously defined, with a Grignard Reagent to form a magnesium salt or a reagent selected from the group consisting of an alkyl lithium, alkenyl lithium, alkynyl lithium, aryl lithium, aralkyl lithium, and a heteroaryl lithium, all which can be optionally substituted to form a lithium salt;

5 reacting said magnesium salt or lithium salt with a compound selected from the group consisting of a saturated or unsaturated acyl halide, saturated or unsaturated carboxylic acid anhydride and a saturated or unsaturated activated carboxylic acid ester, all of which may optionally be substituted by one or more selected from the group consisting of

10 protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, amino, halo, protected carboxy and cyano;

separating and isolating said compound of Formula I.

2. The process of Claim 1 to manufacture a compound of Formula III or salts thereof



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wherein:

X is selected from the group consisting of hydrogen, an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms, and an optionally substituted saturated acyl having from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and

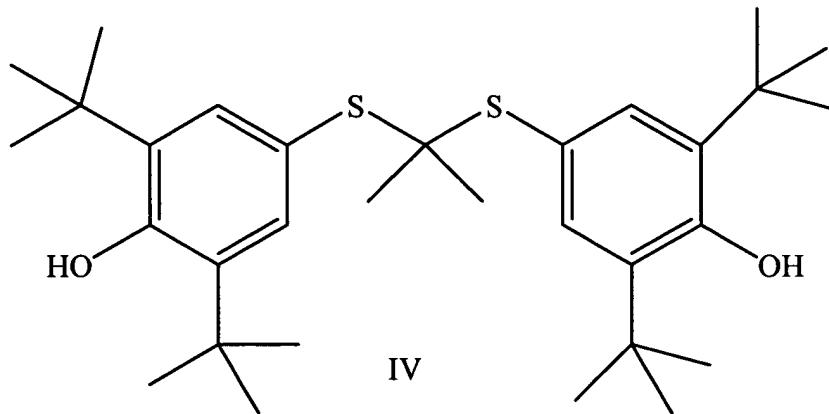
optionally substituted saturated acyl optionally containing a polar or charged functionality;

Y is selected from the group consisting of an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having

5 from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality;

comprising:

reacting a compound of Formula IV



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with a Grignard Reagent to form a magnesium salt or a reagent selected from the group consisting of an alkyl lithium, alkenyl lithium, alkynyl lithium, aryl lithium, aralkyl lithium, and a heteroaryl lithium, all which can be optionally substituted to form a lithium salt;

15 reacting said magnesium salt or lithium salt with a compound selected from the group consisting of a saturated or unsaturated acyl halide, saturated or unsaturated carboxylic acid anhydride and a saturated or unsaturated activated carboxylic acid ester, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, amino, halo, protected

20 carboxy and cyano;

separating and isolating said compound of Formula III or salts thereof.

3. The process of Claim 2 wherein:

X is hydrogen;

Y is selected from the group consisting of an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality;

5 comprising:

reacting a compound of Formula IV with a Grignard Reagent to form a magnesium salt or a reagent selected from the group consisting of an alkyl lithium, alkenyl lithium, alkynyl lithium, aryl lithium, aralkyl lithium, and a heteroaryl lithium, all which can be optionally substituted to form a lithium salt;

10 reacting said magnesium salt or lithium salt with a compound selected from the group consisting of a saturated or unsaturated acyl halide, saturated or unsaturated carboxylic acid anhydride and a saturated or unsaturated activated carboxylic acid ester, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy

15 and cyano;

separating and isolating said compound of Formula III or salts thereof.

4. The process of Claim 2 wherein:

X is selected from the group consisting of hydrogen, an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms, and an optionally substituted saturated acyl having from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality;

Y is selected from the group consisting of an optionally substituted unsaturated acyl

25 having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality; comprising:

reacting a compound of Formula IV with a Grignard Reagent to form a magnesium salt;

30 reacting said magnesium salt with a compound selected from the group consisting of a saturated or unsaturated acyl halide, saturated or unsaturated carboxylic acid anhydride

and a saturated or unsaturated activated carboxylic acid ester, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano; separating and isolating said compound of Formula III or salts thereof.

5

5. The process of Claim 3 wherein:

X is hydrogen;

Y is selected from the group consisting of an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having

10 from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality; comprising:

reacting a compound of Formula IV with a Grignard Reagent to form a magnesium salt; reacting said magnesium salt with a compound selected from the group consisting of a

15 saturated or unsaturated acyl halide, saturated or unsaturated carboxylic acid anhydride and a saturated or unsaturated activated carboxylic acid ester, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano; separating and isolating said compound of Formula III or salts thereof.

20

6. The process of Claim 5 wherein:

X is hydrogen;

Y is selected from the group consisting of an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having

25 from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality; comprising:

reacting a compound of Formula IV with a Grignard Reagent selected from the group consisting of alkylmagnesium halide, alkenylmagnesium halide, alkynylmagnesium

30 halide, arylmagnesium halide, arylalkylmagnesium halide, alkylmagnesium alkyl, arylmagnesium aryl, arylalkynylmagnesium halide, arylalkenylmagnesium halide, and

heteroarylmagnesium halide, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, protected acyl, nitro, protected amino, halo and protected carboxy, to form a magnesium salt; reacting said magnesium salt with a compound selected from the group consisting of a 5 saturated or unsaturated carboxylic acid anhydride, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano; separating and isolating said compound of Formula III or salts thereof.

10 7. The process of Claim 6 wherein:

X is hydrogen;

Y is selected from the group consisting of an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally

15 substituted saturated acyl optionally containing a polar or charged functionality; comprising:

reacting a solution of a compound of Formula IV with a Grignard Reagent selected from the group consisting of alkylmagnesium halide, alkenylmagnesium halide,

alkynylmagnesium halide, all of which may optionally be substituted by one or more

20 selected from the group consisting of protected hydroxy, alkyl, alkenyl, protected acyl, nitro, protected amino, halo and protected carboxy, to form a magnesium salt;

reacting said magnesium salt with a compound selected from the group consisting of succinic acid anhydride, glutaric acid anhydride, adipic acid anhydride, suberic acid anhydride, sebamic acid anhydride, azelaic acid anhydride, phthalic acid anhydride,

25 maleic acid anhydride, and acetic acid anhydride, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano; separating and isolating said compound of Formula III or salts thereof.

30 8. The process of Claim 7 wherein:

X is hydrogen;

Y is selected from the group consisting of an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality;

5 comprising:

reacting a solution of a compound of Formula IV with a Grignard Reagent selected from the group consisting of Methylmagnesium bromide; Octadecylmagnesium chloride; Tetradecylmagnesium chloride; n-Pentadecylmagnesium bromide; Ethynylmagnesium chloride; n-Nonylmagnesium bromide; n-Octylmagnesium chloride; (2-

10 Methylpropenyl)magnesium bromide; Cyclopentylmagnesium bromide; tert-Pentyl magnesium chloride; Cyclopropylmagnesium bromide; (1-Methyl-2-propenyl)magnesium chloride; 1-Decylmagnesium bromide; 1-Octylmagnesium bromide; 1-Propynylmagnesium bromide; Dodecylmagnesium bromide; sec-Butylmagnesium chloride; 1-Propenylmagnesium bromide; Isopropenylmagnesium bromide; (2,2-Dimethylpropyl)magnesium chloride; 1-Heptylmagnesium bromide; 3-Butenylmagnesium bromide; 1-Pentylmagnesium chloride; 2-Methylpropylmagnesium chloride; (2-Methyl-2-propenyl)magnesium chloride; Ethynylmagnesium bromide; 1-Hexylmagnesium bromide; Vinylmagnesium chloride; Allylmagnesium chloride; Ethylmagnesium chloride; n-Propylmagnesium chloride; Vinylmagnesium bromide;

15 20 Allylmagnesium bromide; Isopropylmagnesium chloride; Isopropylmagnesium bromide; Cyclohexylmagnesium chloride; Cyclohexylmagnesium bromide; 1-Propylmagnesium bromide; Isobutylmagnesium bromide; Ethylmagnesium bromide; 2-Butylmagnesium bromide; 2-Propylmagnesium bromide; Methylmagnesium iodide; n-Butylmagnesium chloride; n-Butylmagnesium bromide; tert-Butylmagnesium chloride; and

25 Methylmagnesium chloride to form a magnesium salt;
reacting said magnesium salt with a compound selected from the group consisting of succinic acid anhydride, glutaric acid anhydride, adipic acid anhydride, suberic acid anhydride, sebatic acid anhydride, azelaic acid anhydride, phthalic acid anhydride, maleic acid anhydride, and acetic acid anhydride, all of which may optionally be
30 substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano;

separating and isolating said compound of Formula III or salts thereof.

9. The process of Claim 8 wherein:

X is hydrogen;

5 Y is selected from the group consisting of an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality; comprising:

10 reacting a solution of a compound of Formula IV with a Grignard Reagent selected from the group consisting of Methylmagnesium bromide; Octadecylmagnesium chloride; Tetradecylmagnesium chloride; n-Nonylmagnesium bromide; n-Octylmagnesium chloride; (2-Methylpropenyl)magnesium bromide; Cyclopentylmagnesium bromide; tert-Pentyl magnesium chloride; Cyclopropylmagnesium bromide; 1-Decylmagnesium bromide; 1-Octylmagnesium bromide; Dodecylmagnesium bromide; sec-Butylmagnesium chloride; (2,2-Dimethylpropyl)magnesium chloride; 1-Heptylmagnesium bromide; 1-Pentylmagnesium chloride; 2-Methylpropylmagnesium chloride; 1-Hexylmagnesium bromide; Ethylmagnesium chloride; n-Propylmagnesium chloride; Isopropylmagnesium chloride; Isopropylmagnesium bromide;

15 Cyclohexylmagnesium chloride; Cyclohexylmagnesium bromide; 1-Propylmagnesium bromide; Isobutylmagnesium bromide; Ethylmagnesium bromide; 2-Butylmagnesium bromide; 2-Propylmagnesium bromide; Methylmagnesium iodide; n-Butylmagnesium chloride; n-Butylmagnesium bromide; tert-Butylmagnesium chloride; and Methylmagnesium chloride to form a magnesium salt;

20 reacting said magnesium salt with a compound selected from the group consisting of succinic acid anhydride, glutaric acid anhydride, adipic acid anhydride, suberic acid anhydride, sebatic acid anhydride, azelaic acid anhydride, phthalic acid anhydride, maleic acid anhydride, and acetic acid anhydride, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy,

25 alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano;

30 separating and isolating said compound of Formula III or salts thereof.

10. The process of Claim 9 wherein:

X is hydrogen;

Y is selected from the group consisting of an optionally substituted unsaturated acyl

5 having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality; comprising:

reacting a solution of a compound of Formula IV with a Grignard Reagent selected from

10 the group consisting of Methylmagnesium bromide; n-Octylmagnesium chloride; (2-Methylpropenyl)magnesium bromide; Cyclopentylmagnesium bromide; tert-Pentyl magnesium chloride; Cyclopropylmagnesium bromide; 1-Octylmagnesium bromide; sec-Butylmagnesium chloride; (2,2-Dimethylpropyl)magnesium chloride; 1-Heptylmagnesium bromide; 1-Pentylmagnesium chloride; 2-Methylpropylmagnesium chloride; 1-Hexylmagnesium bromide; Ethylmagnesium chloride; n-Propylmagnesium chloride; Isopropylmagnesium chloride; Isopropylmagnesium bromide; Cyclohexylmagnesium chloride; Cyclohexylmagnesium bromide; 1-Propylmagnesium bromide; Isobutylmagnesium bromide; Ethylmagnesium bromide; 2-Butylmagnesium bromide; 2-Propylmagnesium bromide; Methylmagnesium iodide; n-Butylmagnesium chloride; n-Butylmagnesium bromide; tert-Butylmagnesium chloride; and Methylmagnesium chloride to form a magnesium salt;

reacting said magnesium salt with a compound selected from the group consisting of succinic acid anhydride, glutaric acid anhydride, adipic acid anhydride, suberic acid anhydride, sebamic acid anhydride, azelaic acid anhydride, phthalic acid anhydride,

25 maleic acid anhydride, and acetic acid anhydride, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano; separating and isolating said compound of Formula III or salts thereof.

30 11. The process of Claim 10 wherein:

X is hydrogen;

Y is selected from the group consisting of an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality;

5 comprising:

reacting a solution of a compound of Formula IV with a Grignard Reagent selected from the group consisting of n-Octylmagnesium chloride; (2-Methylpropenyl)magnesium bromide; Ethylmagnesium chloride; n-Propylmagnesium chloride; Isopropylmagnesium chloride; Isopropylmagnesium bromide; Cyclohexylmagnesium chloride;

10 Methylmagnesium iodide; n-Butylmagnesium chloride; tert-Butylmagnesium chloride; and Methylmagnesium chloride to form a magnesium salt;

reacting said magnesium salt with a compound selected from the group consisting of succinic acid anhydride, glutaric acid anhydride, adipic acid anhydride, suberic acid anhydride, sebatic acid anhydride, azelaic acid anhydride, phthalic acid anhydride,

15 maleic acid anhydride, and acetic acid anhydride, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano; separating and isolating said compound of Formula III or salts thereof.

20 12. The process of Claim 11 wherein:

X is hydrogen;

Y is selected from the group consisting of an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally

25 substituted saturated acyl optionally containing a polar or charged functionality; comprising:

reacting a solution of a compound of Formula IV with isopropylmagnesium chloride to form a magnesium salt;

reacting said magnesium salt with a compound selected from the group consisting of 30 succinic acid anhydride, glutaric acid anhydride, adipic acid anhydride, suberic acid anhydride, sebatic acid anhydride, azelaic acid anhydride, phthalic acid anhydride,

maleic acid anhydride, and acetic acid anhydride, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano; separating and isolating said compound of Formula III or salts thereof.

5

13. The process of Claim 12 wherein:

X is hydrogen;

Y is a saturated acyl having from 1 to 10 carbon atoms or an optionally substituted saturated acyl having from 1 to 10 carbon atoms, said saturated acyl and optionally

10 substituted saturated acyl optionally containing a polar or charged functionality; comprising:

reacting a solution of a compound of Formula IV with isopropylmagnesium chloride to form a magnesium salt;

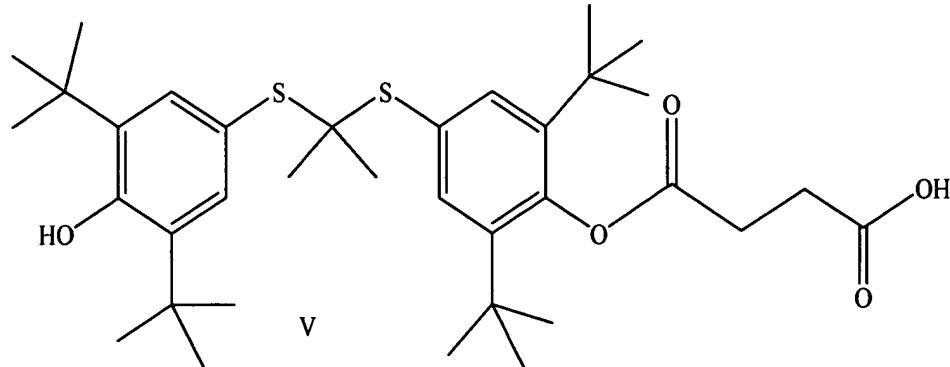
reacting said magnesium salt with a compound selected from the group consisting of

15 succinic acid anhydride, glutaric acid anhydride and acetic acid anhydride, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano;

separating and isolating said compound of Formula III or salts thereof.

20

14. The process of Claim 13 to manufacture a compound of Formula V or salts thereof



comprising:

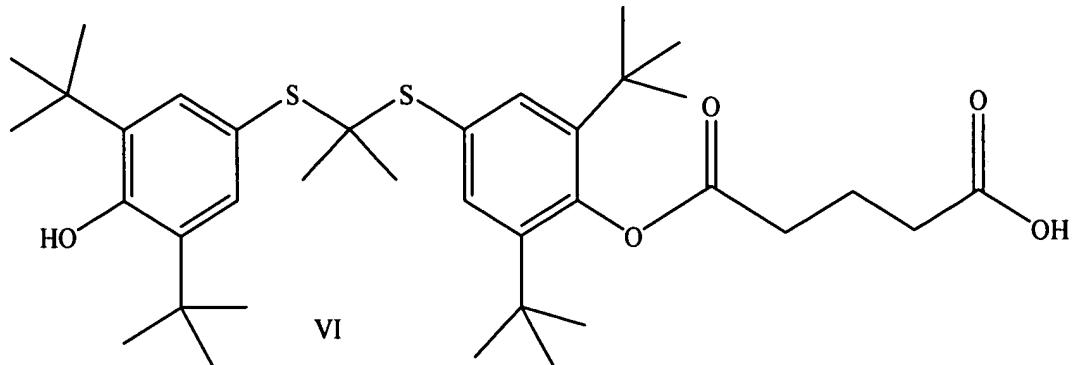
reacting a solution of a compound of Formula IV with isopropylmagnesium chloride to

25 form a magnesium salt;

reacting said magnesium salt with succinic acid anhydride;
separating and isolating said compound of Formula V or salts thereof.

15. The process of Claim 13 to manufacture a compound of Formula VI or salts thereof

5 comprising:

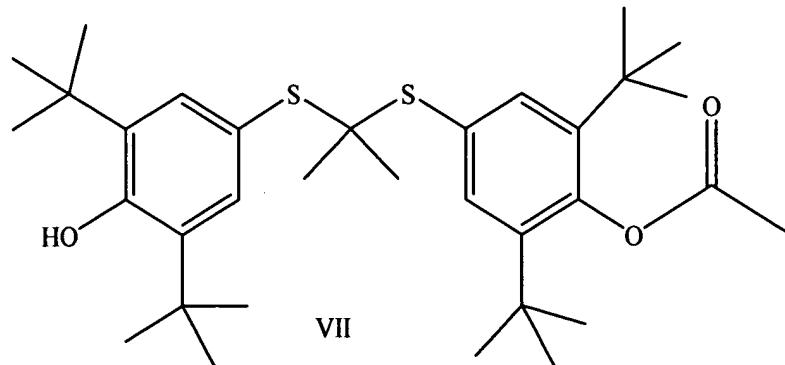


reacting a compound of Formula IV with isopropylmagnesium chloride to form a magnesium salt;

reacting said magnesium salt with glutaric acid anhydride;

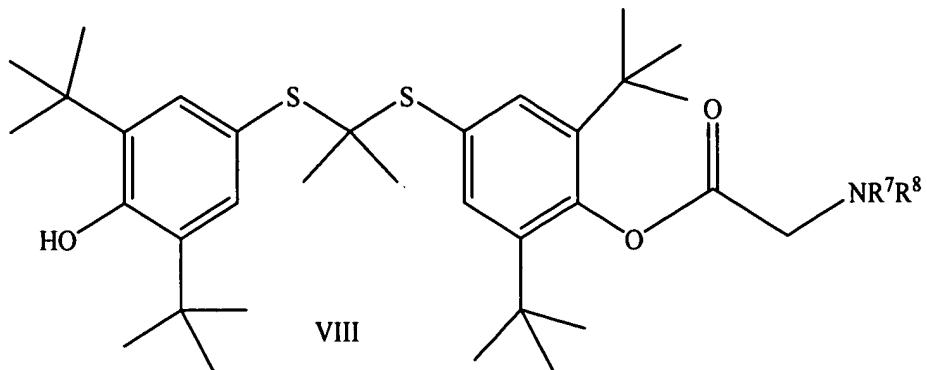
10 separating and isolating said compound of Formula VI or salts thereof.

16. The process of Claim 13 to manufacture a compound of Formula VII or salts thereof comprising:



15 reacting a compound of Formula IV with isopropylmagnesium chloride to form a magnesium salt;
reacting said magnesium salt with acetic acid anhydride;
separating and isolating said compound of Formula VII or salts thereof.

17. The process of Claim 2 to manufacture a compound of Formula VIII or salts thereof



wherein R⁷ and R⁸ are independently selected from the group consisting of hydrogen, acyl, alkyl, alkenyl, aryl, aralkyl, Si(alkyl)₃, protected carboxy, alksulfonyl, and

5 arylsulfonyl;

comprising:

reacting a compound of Formula IV with isopropylmagnesium chloride to form a magnesium salt;

reacting said magnesium salt with acetic acid anhydride substituted by a protected or

10 unprotected amino;

separating and isolating said compound of Formula VIII or salts thereof

18. The process of Claim 6 wherein:

X is hydrogen;

15 Y is selected from the group consisting of an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality;

comprising:

20 reacting a solution of a compound of Formula IV with a Grignard Reagent selected from arylmagnesium halide or heteroarylmagnesium halide to form a magnesium salt, wherein said arylmagnesium halide and heteroarylmagnesium halide may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, protected acyl, nitro, protected amino, halo and protected carboxy;

reacting said magnesium salt with a compound selected from the group consisting of succinic acid anhydride, glutaric acid anhydride, adipic acid anhydride, suberic acid anhydride, sebatic acid anhydride, azelaic acid anhydride, phthalic acid anhydride, maleic acid anhydride, and acetic acid anhydride, all of which may optionally be 5 substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano; separating and isolating said compound of Formula III or salts thereof.

19. The process of Claim 18 wherein:

10 X is hydrogen;

Y is selected from the group consisting of an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality;

15 comprising:

reacting a compound of Formula IV with a Grignard Reagent selected from the group consisting of 3-Chloro-4-fluorophenylmagnesium bromide; 3-Fluoro-2-methylphenylmagnesium bromide; 5-Fluoro-2-methylphenylmagnesium bromide; 3,5-Dimethyl-4-methoxyphenylmagnesium

20 bromide; 3-Fluoro-4-methylphenylmagnesium bromide; 3-[Bis(trimethylsilyl)amino]phenylmagnesium chloride; 3-Thienylmagnesium iodide; 3-Fluoro-4-chlorophenylmagnesium bromide; 3,4,5-Trifluorophenylmagnesium bromide; 4-Methoxy-2-methylphenylmagnesium bromide; 2,4-Dimethoxyphenylmagnesium bromide; 2,3-Dimethylphenylmagnesium bromide; 3-Methylphenylmagnesium chloride; 25 (4-methyl-1-naphthalenyl)magnesium bromide; (3-fluoro-4-methoxyphenyl)magnesium bromide; 2-Chloro-5-thienylmagnesium bromide; 3,4-Dimethylphenylmagnesium chloride; 3-Methyl-2-thienylmagnesium bromide; Pentamethylphenylmagnesium bromide; 3,4-Dimethoxyphenylmagnesium bromide; (3,4-Dimethylphenyl)magnesium bromide; (3,5-Dichlorophenyl)magnesium bromide; (4-Fluoro-3-methylphenyl)magnesium bromide; 3,4-Dichlorophenylmagnesium bromide; 2,3,5,6-Tetramethylphenylmagnesium bromide; 9-Phenanthryl magnesium bromide; (4-tert-

Butylphenyl)magnesium bromide; 2,5-Dimethoxyphenylmagnesium bromide; 3,5-Difluorophenylmagnesium bromide; 4-Chlorophenylmagnesium chloride; (6-Methoxy-2-naphthyl)magnesium bromide; (2-Methoxy-1-naphthyl)magnesium bromide; 3-Methoxyphenylmagnesium bromide; (3-Chlorophenyl)magnesium bromide; (3,5-Dimethylphenyl)magnesium bromide; (2-Methylphenyl)magnesium chloride; 4-Fluoro-2-methylphenylmagnesium bromide; (2,5-Dimethylphenyl)magnesium bromide; m-Methylphenylmagnesium bromide; 4-Ethylphenylmagnesium bromide; 2-Pyridylmagnesium bromide; 4-Phenoxyphenylmagnesium bromide; 2-Naphthylmagnesium bromide; (2-Methyl-1-naphthyl)magnesium bromide; 2,6-Dimethylphenylmagnesium bromide; 2-Ethylphenylmagnesium bromide; 4-(Methylthio)phenylmagnesium bromide; (4-Isopropylphenyl)magnesium bromide; 3,4-Methylenedioxyphenylmagnesium bromide; 3-Fluorophenylmagnesium bromide; (o-Methoxyphenyl)magnesium bromide; Phenylmagnesium iodide; (4-Methoxyphenyl)magnesium bromide; 4-(Dimethylamino)phenylmagnesium bromide; 2-Thienylmagnesium bromide; (4-Methylphenyl)magnesium bromide; Mesitylmagnesium bromide; 2-Tolylmagnesium bromide; Pentafluorophenylmagnesium bromide; (4-Chlorophenyl)magnesium bromide; 1-Naphthalenylmagnesium bromide; 4-Methylphenylmagnesium chloride; 4-Fluorophenylmagnesium bromide; Phenylmagnesium chloride; Phenylmagnesium bromide; and (4-Biphenylyl)magnesium bromide to form a magnesium salt;

reacting said magnesium salt with a compound selected from the group consisting of succinic acid anhydride, glutaric acid anhydride, adipic acid anhydride, suberic acid anhydride, sebatic acid anhydride, azelaic acid anhydride, phthalic acid anhydride, maleic acid anhydride, and acetic acid anhydride, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano; separating and isolating said compound of Formula III or salts thereof.

20. The process of Claim 19 wherein:

30 X is hydrogen;

Y is selected from the group consisting of an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality;

5 comprising:

reacting a compound of Formula IV with a Grignard Reagent selected from the group consisting of 3,5-Dimethyl-4-methoxyphenylmagnesium bromide; 4-Methoxy-2-methylphenylmagnesium bromide; 2,4-Dimethoxyphenylmagnesium bromide; 2,3-Dimethylphenylmagnesium bromide; 3-Methylphenylmagnesium chloride; 3,4-

10 Dimethylphenylmagnesium chloride; Pentamethylphenylmagnesium bromide; 3,4-Dimethoxyphenylmagnesium bromide; (3,4-Dimethylphenyl)magnesium bromide; 2,3,5,6-Tetramethylphenylmagnesium bromide; (4-tert-Butylphenyl)magnesium bromide; 2,5-Dimethoxyphenylmagnesium bromide; 3-Methoxyphenylmagnesium bromide; (3,5-Dimethylphenyl)magnesium bromide; (2-Methylphenyl)magnesium chloride; (2,5-

15 Dimethylphenyl)magnesium bromide; m-Methylphenylmagnesium bromide; 4-Ethylphenylmagnesium bromide; 4-Phenoxyphenylmagnesium bromide; 2,6-Dimethylphenylmagnesium bromide; 2-Ethylphenylmagnesium bromide; (4-Isopropylphenyl)magnesium bromide; 3,4-Methylenedioxyphenylmagnesium bromide; (o-Methoxyphenyl)magnesium bromide; Phenylmagnesium iodide; (4-

20 Methoxyphenyl)magnesium bromide; (4-Methylphenyl)magnesium bromide; Mesitylmagnesium bromide; 2-Tolylmagnesium bromide; 4-Methylphenylmagnesium chloride; Phenylmagnesium chloride; and Phenylmagnesium bromide to form a magnesium salt;

reacting said magnesium salt with a compound selected from the group consisting of 25 succinic acid anhydride, glutaric acid anhydride, adipic acid anhydride, suberic acid anhydride, sebatic acid anhydride, azelaic acid anhydride, phthalic acid anhydride, maleic acid anhydride, and acetic acid anhydride, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano;

30 separating and isolating said compound of Formula III or salts thereof.

21. The process of Claim 20 wherein:

X is hydrogen;

Y is selected from the group consisting of an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having

5 from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality; comprising:

reacting a compound of Formula IV with a Grignard Reagent selected from the group consisting of 3-Methylphenylmagnesium chloride; (4-tert-Butylphenyl)magnesium

10 bromide; 3-Methoxyphenylmagnesium bromide; (2-Methylphenyl)magnesium chloride; m-Methylphenylmagnesium bromide; 4-Ethylphenylmagnesium bromide; 2-Ethylphenylmagnesium bromide; (4-Isopropylphenyl)magnesium bromide; (o-Methoxyphenyl)magnesium bromide; Phenylmagnesium iodide; (4-Methoxyphenyl)magnesium bromide; (4-Methylphenyl)magnesium bromide; 2-

15 Tolylmagnesium bromide; 4-Methylphenylmagnesium chloride; Phenylmagnesium chloride; and Phenylmagnesium bromide to form a magnesium salt;

reacting said magnesium salt with a compound selected from the group consisting of succinic acid anhydride, glutaric acid anhydride, adipic acid anhydride, suberic acid anhydride, sebatic acid anhydride, azelaic acid anhydride, phthalic acid anhydride,

20 maleic acid anhydride, and acetic acid anhydride, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano; separating and isolating said compound of Formula III or salts thereof.

25 22. The process of Claim 21 wherein:

X is hydrogen;

Y is selected from the group consisting of an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having

30 from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality; comprising:

reacting a compound of Formula IV with a Grignard Reagent selected from the group consisting of 3-Methylphenylmagnesium chloride; 3-Methoxyphenylmagnesium bromide; (2-Methylphenyl)magnesium chloride; m-Methylphenylmagnesium bromide; (o-Methoxyphenyl)magnesium bromide; Phenylmagnesium iodide; (4-Methoxyphenyl)magnesium bromide; (4-Methylphenyl)magnesium bromide; 2-Tolylmagnesium bromide; 4-Methylphenylmagnesium chloride; Phenylmagnesium chloride; and Phenylmagnesium bromide to form a magnesium salt;

reacting said magnesium salt with a compound selected from the group consisting of succinic acid anhydride, glutaric acid anhydride, adipic acid anhydride, suberic acid anhydride, sebacic acid anhydride, azelaic acid anhydride, phthalic acid anhydride, maleic acid anhydride, and acetic acid anhydride, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano;

separating and isolating said compound of Formula III or salts thereof.

15 23. The process of Claim 22 wherein:

X is hydrogen;

Y is selected from the group consisting of an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality;

20 comprising:

reacting a compound of Formula IV with a Grignard Reagent selected from the group consisting of 3-Methoxyphenylmagnesium bromide; (o-Methoxyphenyl)magnesium bromide; and Phenylmagnesium chloride to form a magnesium salt;

reacting said magnesium salt with a compound selected from the group consisting of succinic acid anhydride, glutaric acid anhydride, adipic acid anhydride, suberic acid anhydride, sebacic acid anhydride, azelaic acid anhydride, phthalic acid anhydride, maleic acid anhydride, and acetic acid anhydride, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano;

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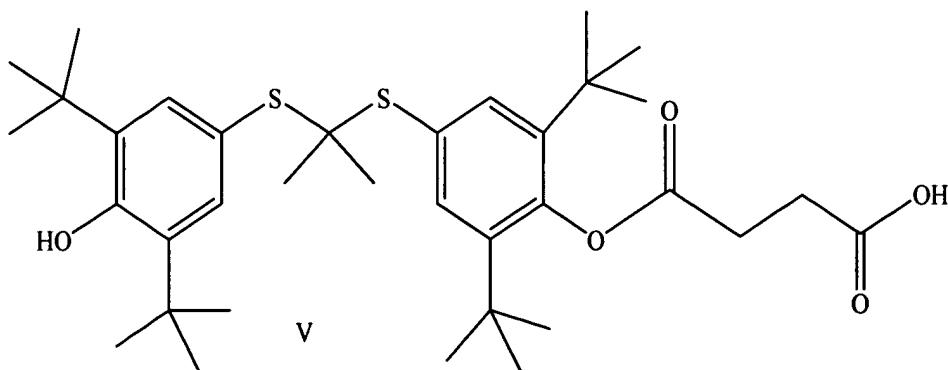
separating and isolating said compound of Formula III or salts thereof.

24. The process of Claim 23 wherein:

X is hydrogen;

5 Y is a saturated acyl having from 1 to 10 carbon atoms or an optionally substituted saturated acyl having from 1 to 10 carbon atoms, said saturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality; comprising:
reacting a compound of Formula IV with a Grignard Reagent selected from the group
10 consisting of 3-Methoxyphenylmagnesium bromide; (o-Methoxyphenyl)magnesium bromide; and Phenylmagnesium chloride to form a magnesium salt;
reacting said magnesium salt with a compound selected from the group consisting of succinic acid anhydride, glutaric acid anhydride and acetic acid anhydride, all of which may optionally be substituted by one or more selected from the group consisting of
15 protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano;
separating and isolating said compound of Formula III or salts thereof.

25. The process of Claim 24 to manufacture a compound of Formula V or salts thereof
20 comprising:

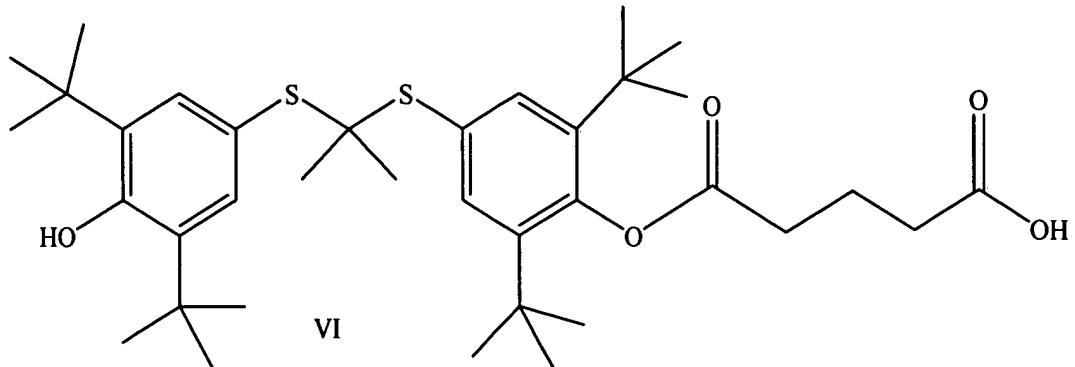


reacting a solution of a compound of Formula IV with a Grignard Reagent selected from the group consisting of 3-Methoxyphenylmagnesium bromide; (o-Methoxyphenyl)magnesium bromide; and Phenylmagnesium chloride to form a
25 magnesium salt;

reacting said magnesium salt with succinic acid anhydride;
separating and isolating said compound of Formula V or salts thereof.

26. The process of Claim 24 to manufacture a compound of Formula VI or salts thereof

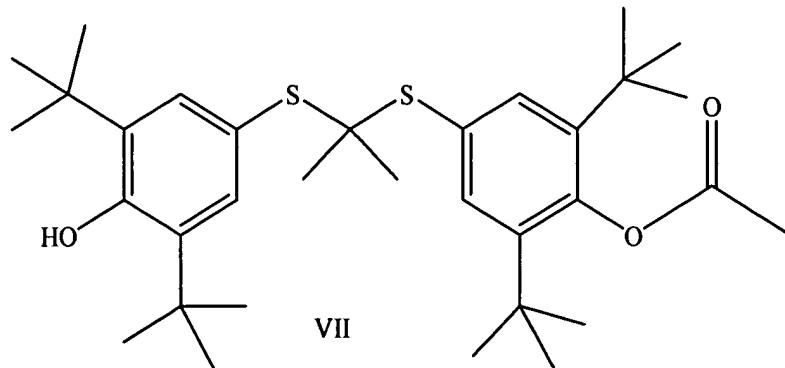
5 comprising:



reacting a compound of Formula IV with a Grignard Reagent selected from the group consisting of 3-Methoxyphenylmagnesium bromide; (o-Methoxyphenyl)magnesium bromide; and Phenylmagnesium chloride to form a magnesium salt;

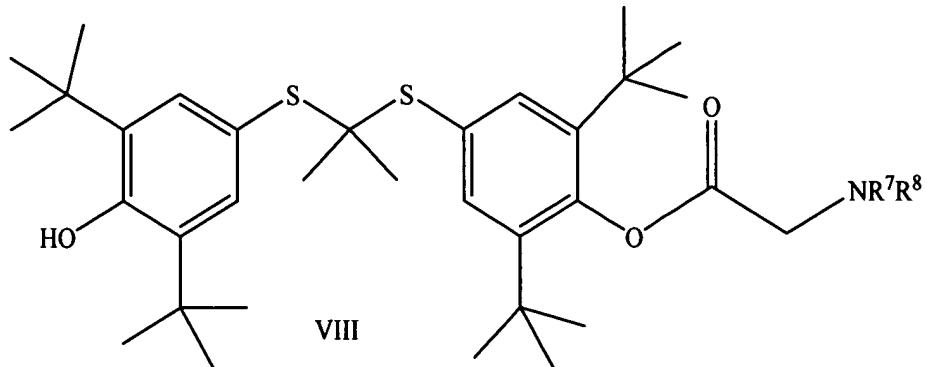
10 reacting said magnesium salt with glutaric acid anhydride;
separating and isolating said compound of Formula VI or salts thereof.

27. The process of Claim 24 to manufacture a compound of Formula VII comprising:



15 reacting a compound of Formula IV with a Grignard Reagent selected from the group consisting of 3-Methoxyphenylmagnesium bromide; (o-Methoxyphenyl)magnesium bromide; and Phenylmagnesium chloride to form a magnesium salt;
reacting said magnesium salt with acetic acid anhydride;
separating and isolating said compound of Formula VII or salts thereof.

28. The process of Claim 2 to manufacture a compound of Formula VIII or salts thereof



wherein R⁷ and R⁸ are independently selected from the group consisting of hydrogen,

5 acyl, alkyl, alkenyl, aryl, aralkyl, Si(alkyl)₃, protected carboxy, alksulfonyl, and arylsulfonyl

comprising:

reacting a compound of Formula IV with a Grignard Reagent selected from the group consisting of 3-Methoxyphenylmagnesium bromide; (o-Methoxyphenyl)magnesium

10 bromide; and Phenylmagnesium chloride to form a magnesium salt;

reacting said magnesium salt with acetic acid anhydride substituted by a protected or unprotected amino;

separating and isolating said compound of Formula VIII or salts thereof

15

29. The process of Claim 6 to manufacture a compound of Formula III or salts thereof

wherein:

X is hydrogen;

Y is selected from the group consisting of an optionally substituted unsaturated acyl

20 having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality;

comprising:

reacting a compound of Formula IV with a Grignard Reagent selected from the group

25 consisting of arylalkylmagnesium halide, arylalkynylmagnesium halide, and

arylalkenylmagnesium halide to form a magnesium salt, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, protected acyl, nitro, protected amino, halo and protected carboxy; reacting said magnesium salt with a compound selected from the group consisting of 5 succinic acid anhydride, glutaric acid anhydride, adipic acid anhydride, suberic acid anhydride, sebatic acid anhydride, azelaic acid anhydride, phthalic acid anhydride, maleic acid anhydride, and acetic acid anhydride, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano; 10 separating and isolating said compound of Formula III or salts thereof.

30. The process of Claim 29 wherein:

X is hydrogen;

Y is selected from the group consisting of an optionally substituted unsaturated acyl

15 having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality; comprising:

reacting a compound of Formula IV with a Grignard Reagent selected from the group

20 consisting of 2,5-Dimethylbenzylmagnesium chloride; 2,6-Dichlorobenzylmagnesium chloride; 2,4-Dichlorobenzylmagnesium chloride; 2-Fluorobenzylmagnesium chloride; 2,4-Dimethylbenzylmagnesium chloride; 3-Bromobenzylmagnesium bromide; 4-

Bromobenzylmagnesium bromide; (2-Phenylethyl)magnesium chloride; 3-

Fluorobenzylmagnesium chloride; (3,4-Dichlorobenzyl)magnesium chloride; 2-

25 Bromobenzylmagnesium bromide; 4-Methoxybenzylmagnesium chloride; 4-

Methylbenzylmagnesium chloride; m-Methylbenzylmagnesium chloride; 2-

Methylbenzylmagnesium chloride; 3-Chlorobenzylmagnesium chloride; 2-

Chlorobenzylmagnesium chloride; m-Methoxybenzylmagnesium chloride;

Benzylmagnesium chloride; (Phenylethynyl)magnesium bromide; 4-

30 Fluorobenzylmagnesium chloride; Benzylmagnesium bromide; 4-

Chlorobenzylmagnesium chloride; and 2-Chloro-6-fluorobenzylmagnesium chloride to form a magnesium salt;
reacting said magnesium salt with a compound selected from the group consisting of succinic acid anhydride, glutaric acid anhydride, adipic acid anhydride, suberic acid
5 anhydride, sebatic acid anhydride, azelaic acid anhydride, phthalic acid anhydride, maleic acid anhydride, and acetic acid anhydride, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano;
separating and isolating said compound of Formula III or salts thereof.

10

31. The process of Claim 30 wherein:

X is hydrogen;

Y is selected from the group consisting of an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having

15 from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality;
comprising:

reacting a compound of Formula IV with a Grignard Reagent selected from the group consisting of 2,5-Dimethylbenzylmagnesium chloride; 2,4-Dimethylbenzylmagnesium

20 chloride; (2-Phenylethyl)magnesium chloride; 4-Methoxybenzylmagnesium chloride; 4-Methylbenzylmagnesium chloride; m-Methylbenzylmagnesium chloride; 2-Methylbenzylmagnesium chloride; m-Methoxybenzylmagnesium chloride;

Benzylmagnesium chloride; and Benzylmagnesium bromide to form a magnesium salt;

reacting said magnesium salt with a compound selected from the group consisting of

25 succinic acid anhydride, glutaric acid anhydride, adipic acid anhydride, suberic acid anhydride, sebatic acid anhydride, azelaic acid anhydride, phthalic acid anhydride, maleic acid anhydride, and acetic acid anhydride, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano;

30 separating and isolating said compound of Formula III or salts thereof.

32. The process of Claim 31 wherein:

X is hydrogen;

Y is selected from the group consisting of an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having

5 from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality; comprising:

reacting a compound of Formula IV with Benzylmagnesium chloride to form a magnesium salt;

10 reacting said magnesium salt with a compound selected from the group consisting of succinic acid anhydride, glutaric acid anhydride, adipic acid anhydride, suberic acid anhydride, sebatic acid anhydride, azelaic acid anhydride, phthalic acid anhydride, maleic acid anhydride, and acetic acid anhydride, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, 15 alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano; separating and isolating said compound of Formula III or salts thereof.

33. The process of Claim 32 wherein:

X is hydrogen;

20 Y is a saturated acyl having from 1 to 10 carbon atoms or an optionally substituted saturated acyl having from 1 to 10 carbon atoms, said saturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality; comprising:

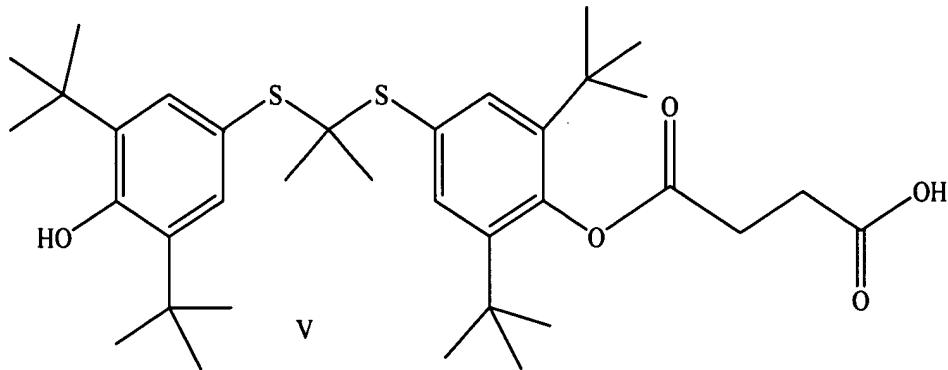
reacting a solution of a compound of Formula IV with Benzylmagnesium chloride to 25 form a magnesium salt;

reacting said magnesium salt with a compound selected from the group consisting of succinic acid anhydride, glutaric acid anhydride and acetic acid anhydride, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy

30 and cyano;

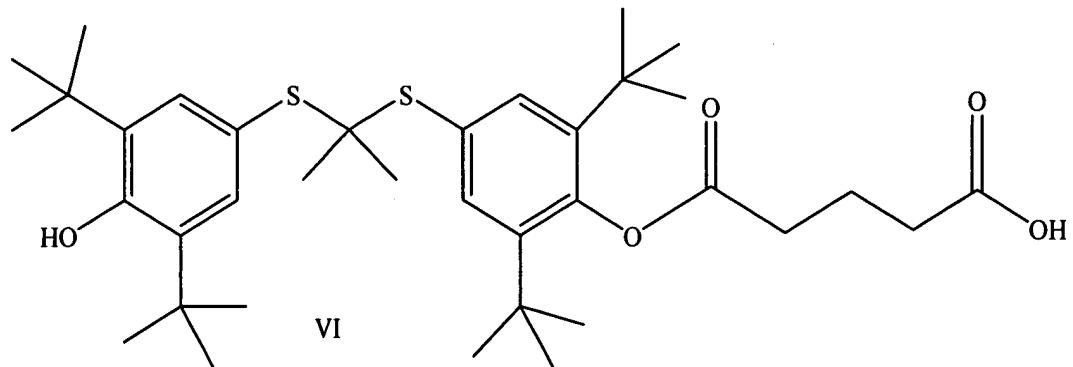
separating and isolating said compound of Formula III or salts thereof.

34. The process of Claim 33 to manufacture a compound of Formula V or salts thereof comprising:



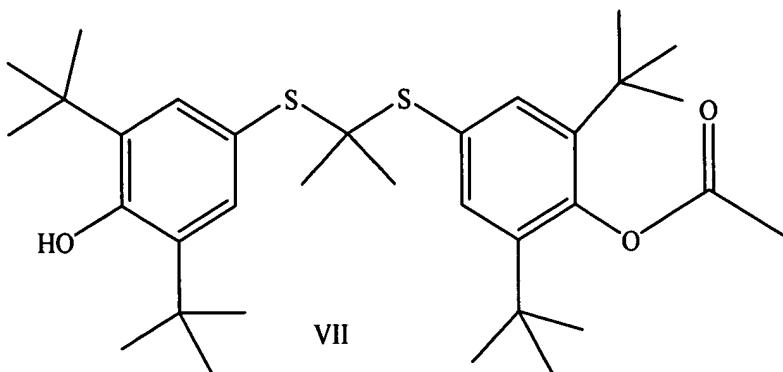
5 reacting a compound of Formula IV with Benzylmagnesium chloride to form a magnesium salt;
reacting said magnesium salt with succinic acid anhydride;
separating and isolating said compound of Formula V or salts thereof.

10 35. The process of Claim 33 to manufacture a compound of Formula VI or salts thereof comprising:



reacting a compound of Formula IV with Benzylmagnesium chloride to form a magnesium salt;
15 reacting said magnesium salt with glutaric acid anhydride;
separating and isolating said compound of Formula VI or salts thereof.

36. The process of Claim 33 to manufacture a compound of Formula VII or salts thereof comprising:

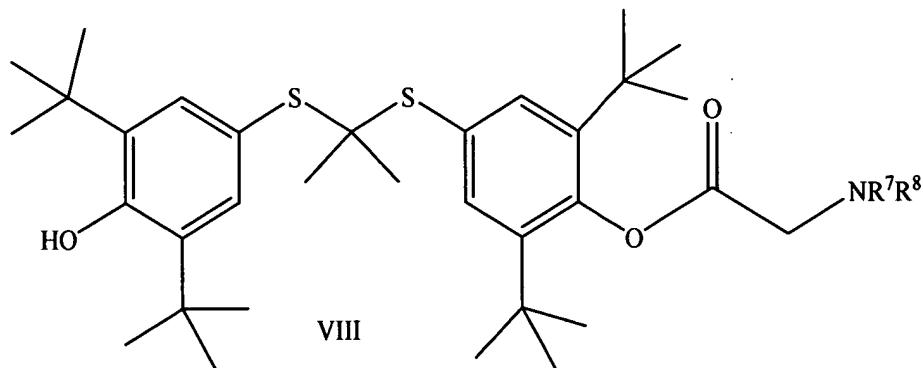


reacting a compound of Formula IV with Benzylmagnesium chloride to form a magnesium salt;

reacting said magnesium salt with acetic acid anhydride;

5 separating and isolating said compound of Formula VII or salts thereof.

37. The process of Claim 2 to manufacture a compound of Formula VIII or salts thereof



wherein R⁷ and R⁸ are independently selected from the group consisting of hydrogen,

10 acyl, alkyl, alkenyl, aryl, aralkyl, Si(alkyl)₃, protected carboxy, alksulfonyl, and arylsulfonyl

comprising:

reacting a compound of Formula IV with Benzylmagnesium chloride to form a magnesium salt;

15 reacting said magnesium salt with acetic acid anhydride substituted by a protected or unprotected amino;

separating and isolating said compound of Formula VIII or salts thereof

38. The process of Claim 6 wherein:

X is hydrogen;

Y is selected from the group consisting of an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally

5 substituted saturated acyl optionally containing a polar or charged functionality;
comprising:

reacting a compound of Formula IV with a Grignard Reagent selected from alkylmagnesium alkyl or arylmagnesium aryl to form a magnesium salt, wherein said alkylmagnesium alkyl and arylmagnesium aryl may optionally be substituted by one or

10 more selected from the group consisting of protected hydroxy, alkyl, alkenyl, protected acyl, nitro, protected amino, halo and protected carboxy;

reacting said magnesium salt with a compound selected from the group consisting of succinic acid anhydride, glutaric acid anhydride, adipic acid anhydride, suberic acid anhydride, sebatic acid anhydride, azelaic acid anhydride, phthalic acid anhydride,

15 maleic acid anhydride, and acetic acid anhydride, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano;
separating and isolating said compound of Formula III or salts thereof.

20 39. The process of Claim 38 wherein:

X is hydrogen;

Y is selected from the group consisting of an optionally substituted unsaturated acyl having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally

25 substituted saturated acyl optionally containing a polar or charged functionality;
comprising:

reacting a compound of Formula IV with a Grignard Reagent selected from the group consisting of n-Butyl-sec-butyldimagnesium; Dimethylmagnesium; Di-n-Butylmagnesium; Diethylmagnesium; and Diphenylmagnesium to form a magnesium salt;

30 reacting said magnesium salt with a compound selected from the group consisting of succinic acid anhydride, glutaric acid anhydride, adipic acid anhydride, suberic acid

anhydride, sebacic acid anhydride, azelaic acid anhydride, phthalic acid anhydride, maleic acid anhydride, and acetic acid anhydride, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano;

5 separating and isolating said compound of Formula III or salts thereof.

40. The process of Claim 39 wherein:

X is hydrogen;

Y is selected from the group consisting of an optionally substituted unsaturated acyl

10 having from 1 to 18 carbon atoms and an optionally substituted saturated acyl having from 1 to 18 carbon atoms, said optionally substituted unsaturated acyl and optionally substituted saturated acyl optionally containing a polar or charged functionality; comprising:

reacting a compound of Formula IV with a Grignard Reagent selected from the group

15 consisting of n-Butyl-sec-butyldimagnesium; Dimethylmagnesium; Di-n-Butylmagnesium; Diethylmagnesium; and Diphenylmagnesium to form a magnesium salt;

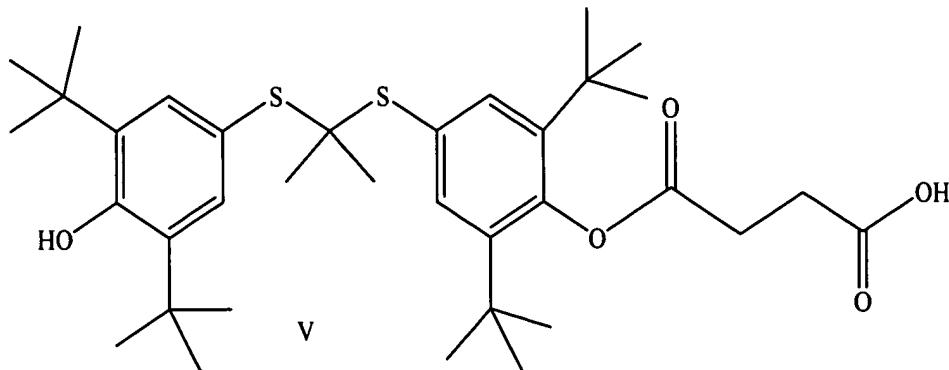
reacting said magnesium salt with a compound selected from the group consisting of succinic acid anhydride, glutaric acid anhydride and acetic acid anhydride, all of which may optionally be substituted by one or more selected from the group consisting of

20 protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy and cyano;

separating and isolating said compound of Formula III or salts thereof.

41. The process of Claim 40 to manufacture a compound of Formula V or salts thereof

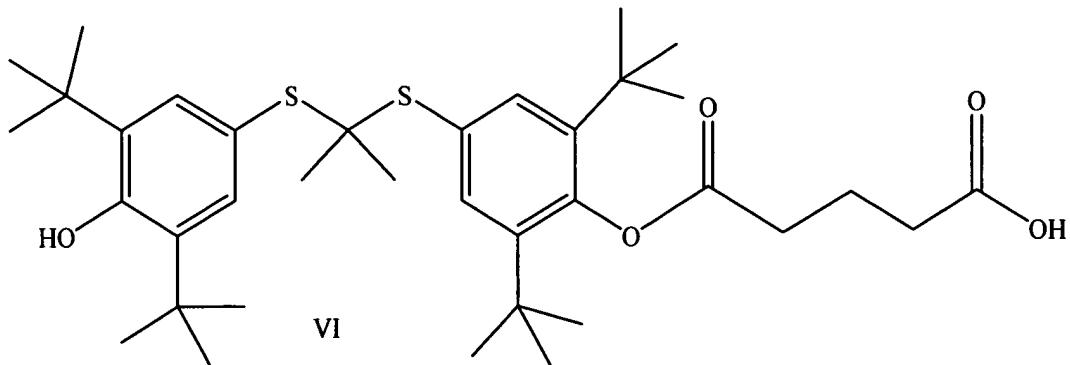
25 comprising:



reacting a compound of Formula IV with a Grignard Reagent selected from the group consisting of n-Butyl-sec-butylmagnesium; Dimethylmagnesium; Di-n-Butylmagnesium; Diethylmagnesium; and Diphenylmagnesium to form a magnesium salt;

5. reacting said magnesium salt with succinic acid anhydride;
separating and isolating said compound of Formula V or salts thereof.

42. The process of Claim 40 to manufacture a compound of Formula VI or salts thereof comprising:

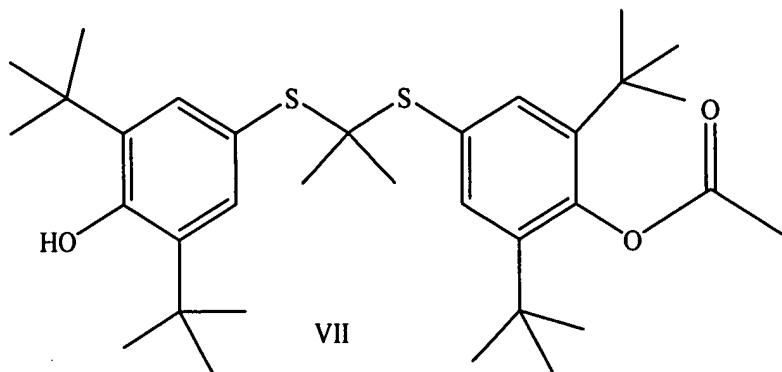


10

reacting a compound of Formula IV with a Grignard Reagent selected from the group consisting of n-Butyl-sec-butylmagnesium; Dimethylmagnesium; Di-n-Butylmagnesium; Diethylmagnesium; and Diphenylmagnesium to form a magnesium salt;
reacting said magnesium salt with glutaric acid anhydride;

15. separating and isolating said compound of Formula VI or salts thereof.

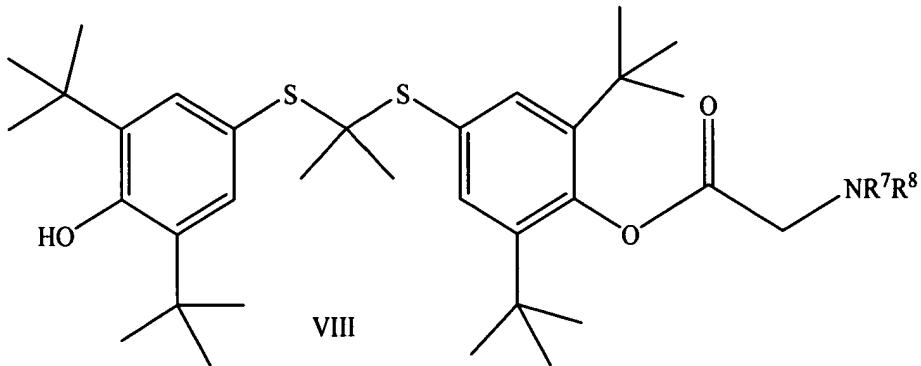
43. The process of Claim 40 to manufacture a compound of Formula VII or salts thereof comprising:



reacting a compound of Formula IV with a Grignard Reagent selected from the group consisting of n-Butyl-sec-butylmagnesium; Dimethylmagnesium; Di-n-Butylmagnesium; Diethylmagnesium; and Diphenylmagnesium to form a magnesium salt;

5 reacting said magnesium salt with acetic acid anhydride;
separating and isolating said compound of Formula VII or salts thereof.

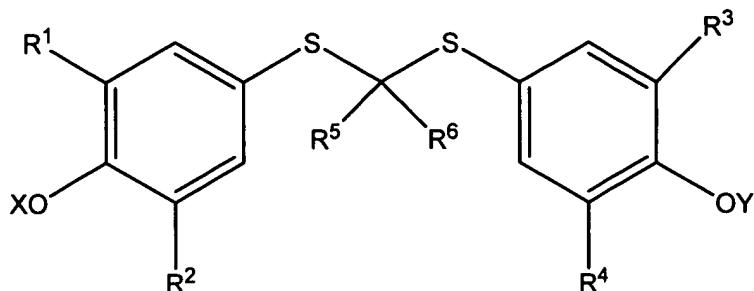
44. The process of Claim 2 to manufacture a compound of Formula VIII or salts thereof



10 wherein R⁷ and R⁸ are independently selected from the group consisting of hydrogen, acyl, alkyl, alkenyl, aryl, aralkyl, Si(alkyl)₃, protected carboxy, alksulfonyl, and arylsulfonyl
comprising:
reacting a compound of Formula IV with a Grignard Reagent selected from the group consisting of n-Butyl-sec-butylmagnesium; Dimethylmagnesium; Di-n-Butylmagnesium; Diethylmagnesium and Diphenylmagnesium to form a magnesium salt;
reacting said magnesium salt with acetic acid anhydride substituted by a protected or unprotected amino;

separating and isolating said compound of Formula VIII or salts thereof

45. A process of manufacturing a compound of Formula I or salts thereof



5

I

wherein R¹, R², R³, and R⁴ are independently selected from the group consisting of hydrogen and alkyl, said alkyl optionally substituted by hydroxy, alkyl, alkenyl, acyl, nitro, amino, halo, carboxy and cyano;

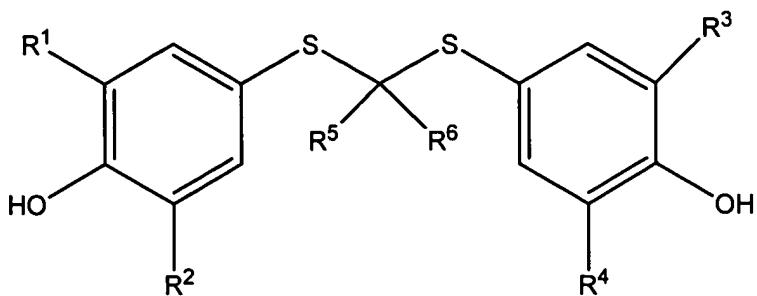
10 R⁵ and R⁶ are the same or different and independently selected from the group consisting of alkyl, alkenyl, and aryl all of which can be optionally substituted by hydroxy, alkyl, alkenyl, acyl, nitro, amino, halo, carboxy and cyano;

R⁵ and R⁶ can come together to form a carbocyclic ring;

15 X is selected from the group consisting of hydrogen, an optionally substituted unsaturated alkyl having from 1 to 10 carbon atoms, and an optionally substituted saturated alkyl having from 1 to 10 carbon atoms, said optionally substituted unsaturated alkyl and optionally substituted saturated alkyl optionally containing a polar or charged functionality;

20 Y is selected from the group consisting of an optionally substituted unsaturated alkyl having from 1 to 10 carbon atoms, and an optionally substituted saturated alkyl having from 1 to 10 carbon atoms, said optionally substituted unsaturated alkyl and optionally substituted saturated alkyl optionally containing a polar or charged functionality; comprising:

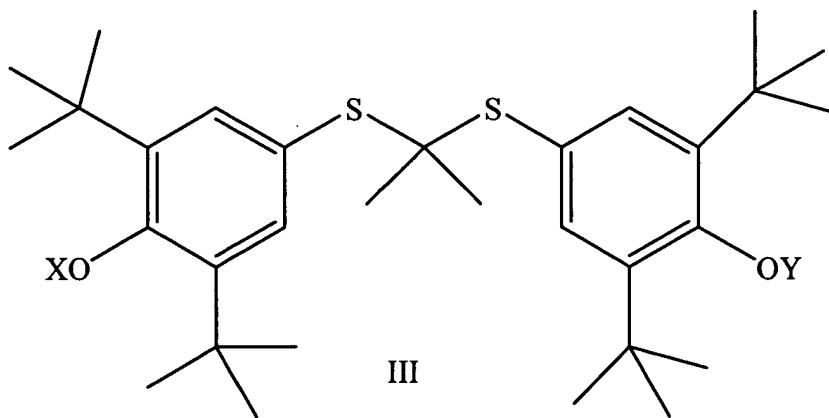
reacting a compound of Formula II



II

wherein R¹, R², R³, R⁴, R⁵ and R⁶ are as previously defined, with a Grignard Reagent to form a magnesium salt or a reagent selected from the group consisting of an alkyl lithium, alkenyl lithium, alkynyl lithium, aryl lithium, aralkyl lithium, and a heteroaryl lithium, all which can be optionally substituted to form a lithium salt; reacting said magnesium salt or lithium salt with a compound selected from the group consisting of a saturated or unsaturated alkyl halide, saturated or unsaturated alkyl-O-sulfonyl alkyl, a saturated or unsaturated alkyl-O-sulfonyl aryl, a saturated or unsaturated alkyl-O-acyl, and a saturated or unsaturated epoxide, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy, epoxide and cyano; separating and isolating said compound of Formula I or salts thereof.

46. The process of Claim 45 to manufacture the compound of Formula III or salts thereof



15

wherein:

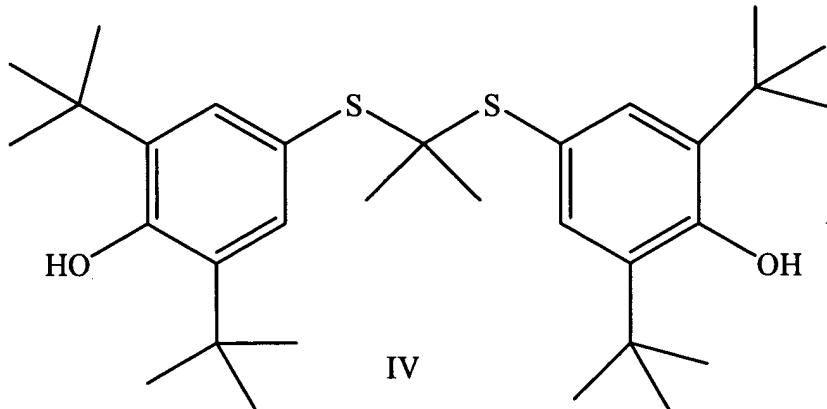
X is selected from the group consisting of hydrogen, an optionally substituted unsaturated alkyl having from 1 to 10 carbon atoms, and an optionally substituted saturated alkyl having from 1 to 10 carbon atoms, said optionally substituted unsaturated alkyl and

optionally substituted saturated alkyl optionally containing a polar or charged functionality;

Y is selected from the group consisting of an optionally substituted unsaturated alkyl having from 1 to 10 carbon atoms, and an optionally substituted saturated alkyl having

5 from 1 to 10 carbon atoms, said optionally substituted unsaturated alkyl and optionally substituted saturated alkyl optionally containing a polar or charged functionality; comprising:

reacting a compound of Formula IV



10 with a Grignard Reagent to form a magnesium salt or a reagent selected from the group consisting of an alkyl lithium, alkenyl lithium, alkynyl lithium, aryl lithium, aralkyl lithium, and a heteroaryl lithium, all which can be optionally substituted to form a lithium salt;

reacting said magnesium salt or lithium salt with a compound selected from the group

15 consisting of a saturated or unsaturated alkyl halide, saturated or unsaturated alkyl-O-sulfonyl alkyl, a saturated or unsaturated alkyl-O-sulfonyl aryl, a saturated or unsaturated alkyl-O-acyl, and a saturated or unsaturated epoxide, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy, epoxide and cyano;

20 separating and isolating said compound of Formula III or salts thereof.

47. The process of Claim 46 wherein:

X is hydrogen;

Y is selected from the group consisting of an optionally substituted unsaturated alkyl having from 1 to 10 carbon atoms, and an optionally substituted saturated alkyl having from 1 to 10 carbon atoms, said optionally substituted unsaturated alkyl and optionally substituted saturated alkyl optionally containing a polar or charged functionality;

5 comprising:

reacting a compound of Formula IV with a Grignard Reagent to form a magnesium salt or a reagent selected from the group consisting of an alkyl lithium, alkenyl lithium, alkynyl lithium, aryl lithium, aralkyl lithium, and a heteroaryl lithium, all which can be optionally substituted to form a lithium salt;

10 reacting said magnesium salt or lithium salt with a compound selected from the group consisting of a saturated or unsaturated alkyl halide, saturated or unsaturated alkyl-O-sulfonyl alkyl, a saturated or unsaturated alkyl-O-sulfonyl aryl, a saturated or unsaturated alkyl-O-acyl, and a saturated or unsaturated epoxide, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, 15 alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy, epoxide and cyano; separating and isolating said compound of Formula III or salts thereof.

48. The process of Claim 46 wherein:

X is selected from the group consisting of hydrogen, an optionally substituted unsaturated alkyl having from 1 to 10 carbon atoms, and an optionally substituted saturated alkyl having from 1 to 10 carbon atoms, said optionally substituted unsaturated alkyl and optionally substituted saturated alkyl optionally containing a polar or charged functionality;

20 Y is selected from the group consisting of an optionally substituted unsaturated alkyl having from 1 to 10 carbon atoms, and an optionally substituted saturated alkyl having from 1 to 10 carbon atoms, said optionally substituted unsaturated alkyl and optionally substituted saturated alkyl optionally containing a polar or charged functionality;

25 comprising:

reacting a compound of Formula IV with a Grignard Reagent to form a magnesium salt;

30 reacting said magnesium salt with a compound selected from the group consisting of a saturated or unsaturated alkyl halide, saturated or unsaturated alkyl-O-sulfonyl alkyl, a

saturated or unsaturated alkyl-O-sulfonyl aryl, a saturated or unsaturated alkyl-O-acyl, and a saturated or unsaturated epoxide, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl, nitro, protected amino, halo, protected carboxy, epoxide and cyano;

5 separating and isolating said compound of Formula III or salts thereof.

49. The process of Claim 46 wherein:

X is hydrogen;

Y is selected from the group consisting of an optionally substituted unsaturated alkyl

10 having from 1 to 10 carbon atoms, and an optionally substituted saturated alkyl having from 1 to 10 carbon atoms, said optionally substituted unsaturated alkyl and optionally substituted saturated alkyl optionally containing a polar or charged functionality; comprising:

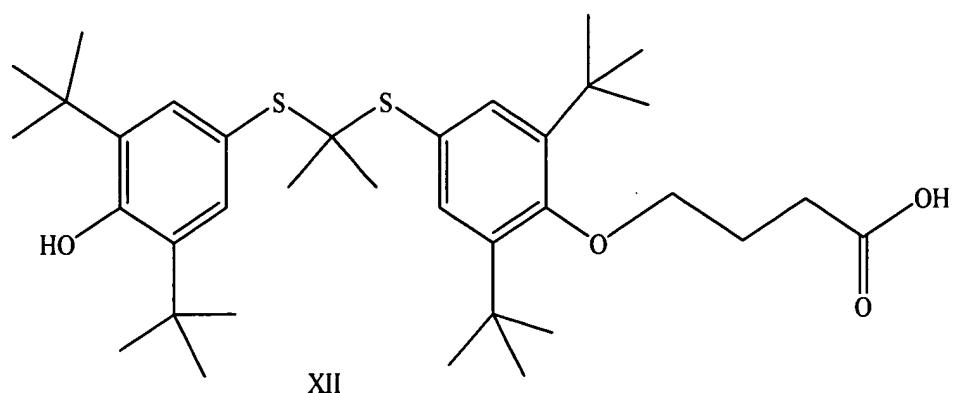
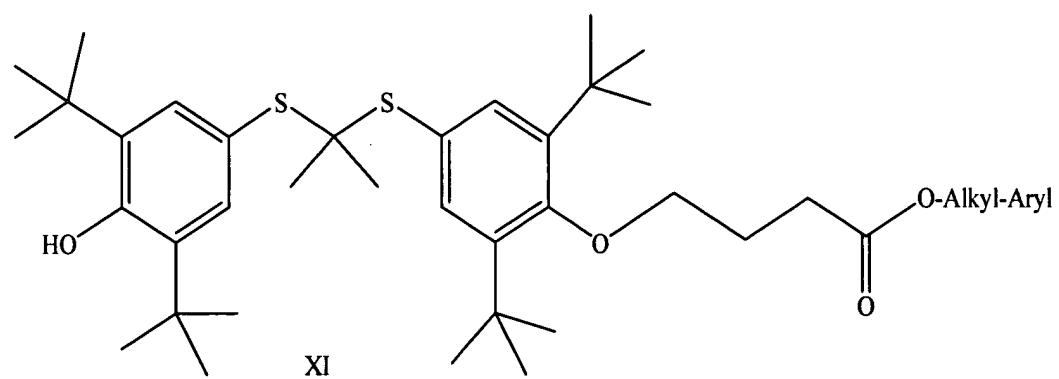
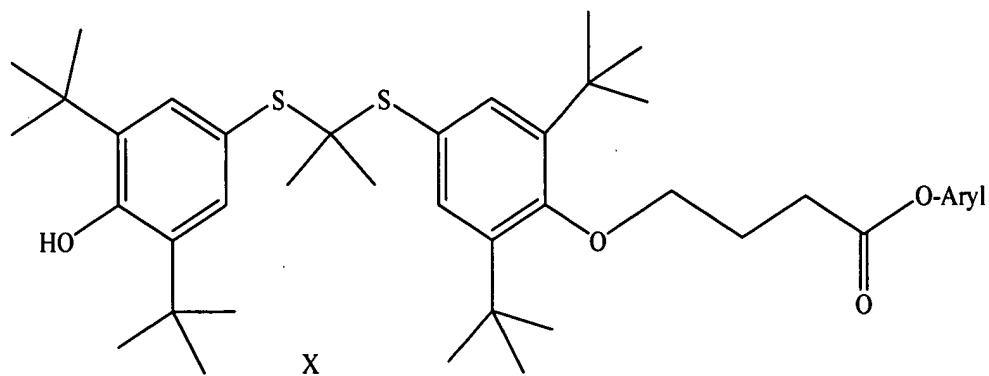
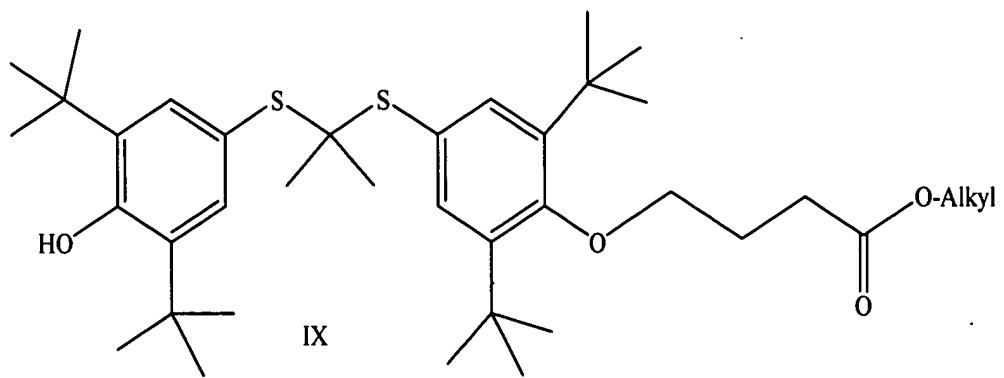
reacting a compound of Formula IV with a Grignard Reagent to form a magnesium salt;

15 reacting said magnesium salt with a compound selected from the group consisting of a saturated or unsaturated alkyl halide, saturated or unsaturated alkyl-O-sulfonyl alkyl, a saturated or unsaturated alkyl-O-sulfonyl aryl, a saturated or unsaturated alkyl-O-acyl, and a saturated or unsaturated epoxide, all of which may optionally be substituted by one or more selected from the group consisting of protected hydroxy, alkyl, alkenyl, acyl,

20 nitro, protected amino, halo, protected carboxy, epoxide and cyano;

separating and isolating said compound of Formula III or salts thereof.

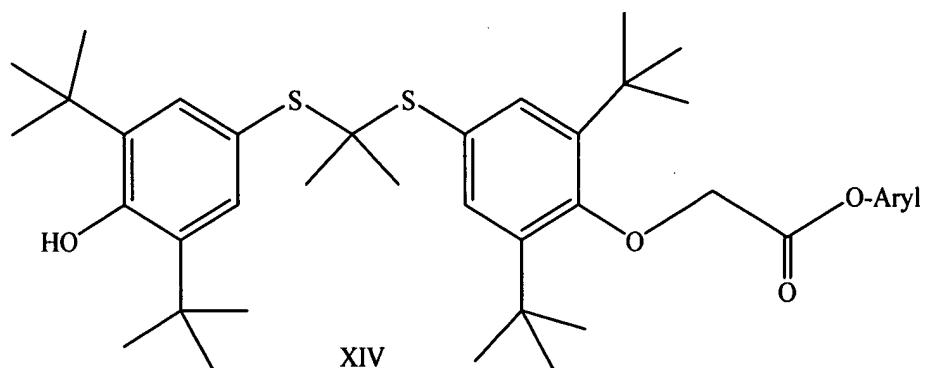
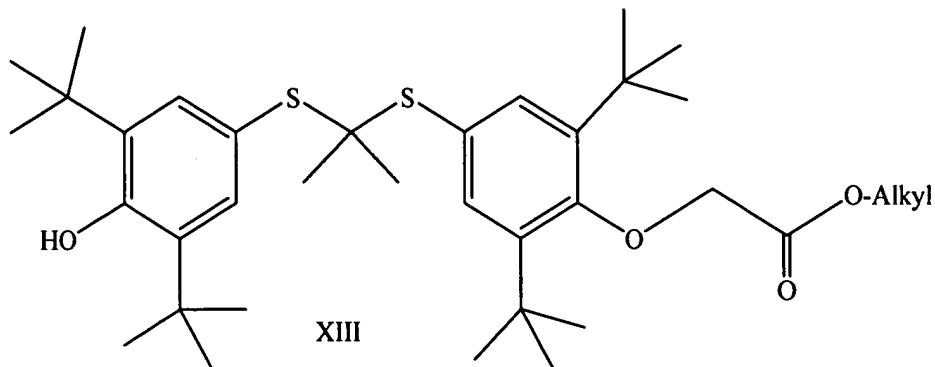
50. The process of Claim 46 to manufacture the compound of Formula IX, X, XI or XII or salts thereof comprising:

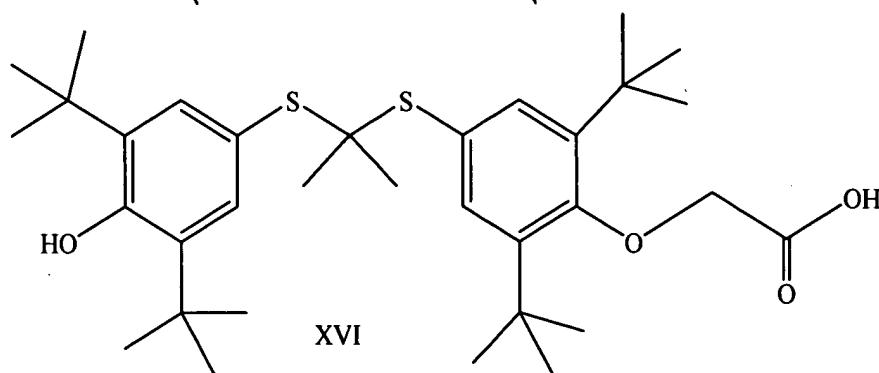
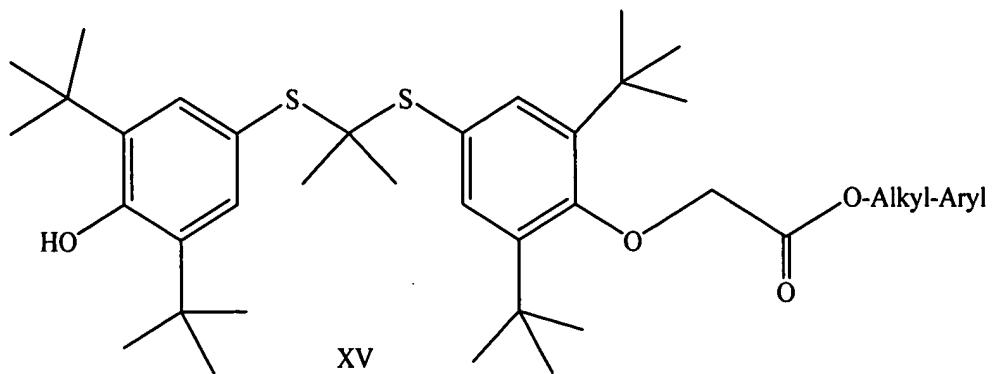


reacting a solution of a compound of Formula IV with isopropylmagnesium chloride to form a magnesium salt;

reacting said magnesium salt with a compound from the group consisting of alkyl 4-halobutyrate, aryl 4-halobutyrate, aralkyl 4-halobutyrate, and butyrolactone; separating and isolating said compound of Formula IX, X, XI or XII or salts thereof.

5 51. The process of Claim 46 to manufacture the compound of Formula XIII, XIV, XV or XVI or salts thereof comprising:





reacting a compound of Formula IV with isopropylmagnesium chloride to form a magnesium salt;

reacting said magnesium salt with alkyl haloacetate, aryl haloacetate, aralkyl haloacetate, and alkali metal haloacetate;

5 separating and isolating said compound of Formula XIII, XIV, XV or XVI or salts thereof.

52. The process of Claim 46 comprising:

10 reacting a solution of a compound of Formula IV with a Grignard Reagent selected from the group consisting of 3-Methoxyphenylmagnesium bromide; (o-Methoxyphenyl)magnesium bromide; and Phenylmagnesium chloride to form a magnesium salt;

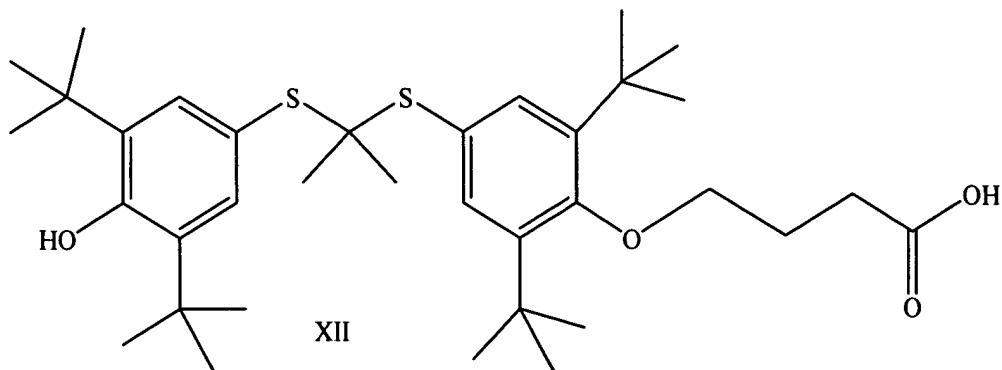
reacting said magnesium salt with a compound from the group consisting of alkyl 4-halobutyrate, aryl 4-halobutyrate, aralkyl 4-halobutyrate, and butyrolactone;

15 separating and isolating said compound of Formula IX, X, XI or XII or salts thereof.

53. The process of Claim 46 comprising:

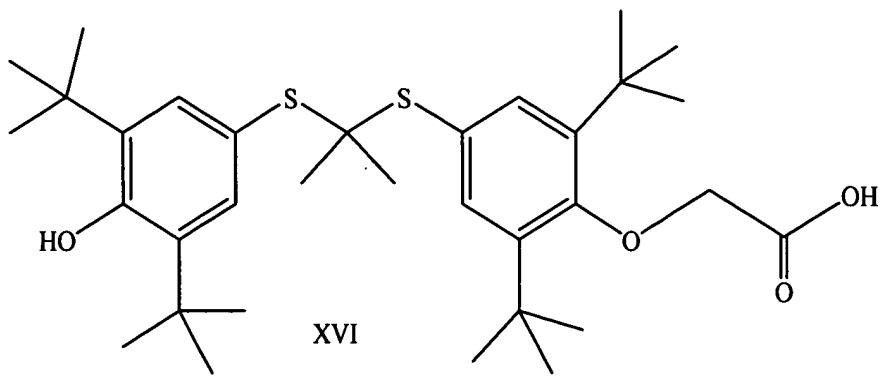
reacting a compound of Formula IV with a Grignard Reagent selected from the group consisting of 3-Methoxyphenylmagnesium bromide; (o-Methoxyphenyl)magnesium bromide; and Phenylmagnesium chloride to form a magnesium salt;
reacting said magnesium salt with alkyl haloacetate, aryl haloacetate, aralkyl haloacetate,
5 and alkali metal haloacetate;
separating and isolating said compound of Formula XIII, XIV, XV or XVI or salts thereof.

54. The process of Claim 46 to manufacture a compound of Formula XII or salts thereof
10 comprising:



reacting a compound of Formula IV with a Grignard Reagent to form a magnesium salt;
15 reacting said magnesium salt with alkyl haloacetate, aryl haloacetate or aralkyl
haloacetate to form the compound of IX, X or XI;
hydrolyzing said compound of IX, X or XI;
separating and isolating said compound of Formula XII or salts thereof.

20 55. The process of Claim 46 to manufacture a compound of Formula XVI or salts thereof
comprising:



reacting a compound of Formula IV with a Grignard Reagent to form a magnesium salt;
reacting said magnesium salt with alkyl haloacetate, aryl haloacetate, or aralkyl
5 haloacetate to form the compound of XIII, XIV or XV;
hydrolyzing said compound of XIII, XIV or XV;
separating and isolating said compound of Formula XVI or salts thereof.